

PROCEDURE CARDS (*this would be created on a double sided card*)

Adding Fractions

There are 3 Simple Steps to add fractions:

- Step 1: Make sure the bottom numbers (the denominators) are the same
- Step 2: Add the top numbers (the numerators), put the answer over the denominator.
- Step 3: Simplify the fraction (if needed).

Example 1:

$$\begin{array}{r} 1 \quad 1 \\ + \\ 4 \quad 4 \end{array}$$

tep 1. The bottom numbers (the denominators) are already the same.
Go straight to step 2.

Step 2. Add the top numbers and put the answer over the same denominator:

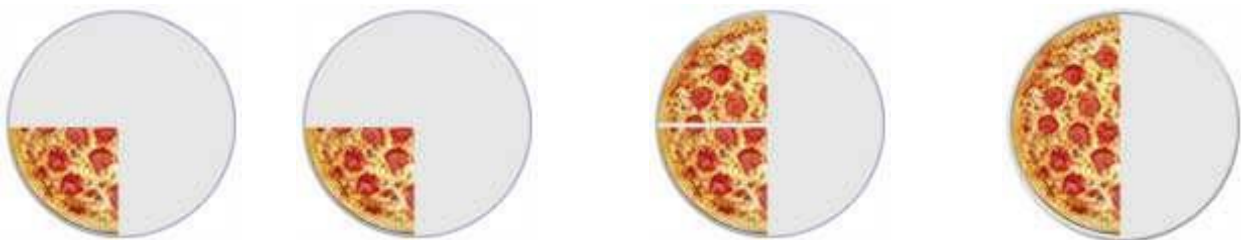
$$\begin{array}{r} 1 \quad 1 \quad 1 + 1 \quad 2 \\ + \quad = \quad = \\ 4 \quad 4 \quad 4 \quad 4 \end{array}$$

Step 3. Simplify the fraction:

$$\begin{array}{r} 2 \quad 1 \\ = \\ 4 \quad 2 \end{array}$$

In picture form it looks like this:

$$\frac{1}{4} \quad + \quad \frac{1}{4} \quad = \quad \frac{2}{4} \quad = \quad \frac{1}{2}$$



... and do you see how $\frac{2}{4}$ is simpler as $\frac{1}{2}$? (see [Equivalent Fractions](#).)

Example 2:

Step 1: The bottom numbers are different.

See how the slices are different sizes?

$$\frac{1}{3} + \frac{1}{6} = ?$$



We need to make them the same before we can continue, because we **can't** add them like that.

The number "6" is twice as big as "3", so to make the bottom numbers the same we can multiply the top and bottom of the first fraction by **2**, like this:

$\times 2$

$$\begin{array}{ccc} & \text{↗} & \\ 1 & & 2 \\ & \text{↘} & \\ & = & \\ 3 & & 6 \end{array}$$

$\times 2$

Important: you multiply **both top and bottom** by the same amount, to keep the value of the fraction the same

Now the fractions have the same bottom number ("6"), and our question looks like this:

$$\frac{2}{6} + \frac{1}{6}$$



The bottom numbers are now the same, so we can go to step 2.

Step 2: Add the top numbers and put them over the same denominator:

$$\begin{array}{r} 2 \quad 1 \quad 2 + 1 \quad 3 \\ + \quad = \quad = \\ 6 \quad 6 \quad 6 \quad 6 \end{array}$$

In picture form it looks like this:

$$\frac{2}{6} + \frac{1}{6} = \frac{3}{6}$$



Step 3: Simplify the fraction:

$$\frac{3}{6} = \frac{1}{2}$$

In picture form the whole answer looks like this:

$$\frac{2}{6} + \frac{1}{6} = \frac{3}{6} = \frac{1}{2}$$

